

Appl. No. 10/820,629

H-1222

Substitute Amendment dated April 5, 2006

Notice of Non-Compliant Amendment dated March 28, 2006

Amendments to the Drawings

The attached sheet of drawings includes changes to Fig. 18. This sheet, which includes Figs. 17-18, replaces the original sheet including Figs. 17-18. Fig. 18 has been corrected to properly identify the primary and secondary volumes and the primary and secondary journals.

Attachments: Replacement Sheet

REMARKS / ARGUMENTS

Claims 32-34, 38-48, 50, 53-54 and 76-88 remain pending in this application.
Claims 35-37, 49, 51-52 and 55 have been canceled without prejudice or disclaimer.
New claims 76-88 have been added.

Priority

Applicants appreciate the Examiner's acknowledgment of the claim for priority and safe receipt of the priority document.

Drawings

Reference numerals 1101-1104 have been added by amendment to page 23 of the specification. Reference number 1205 has been added by amendment to page 24 of the specification. Reference numerals S3301, S3301, S3307, S3308, S3310, S3313 and S3314 have been added by amendment to page 47 of the specification. Reference numerals S3401, S3402 and S3409-S3412 have been added by amendment to page 48 of the specification. Reference numerals S3701-S3703, S3709, S3710 and S3712-S3716 have been added by amendment to pages 50 and 51 of the specification. Fig. 18 has been corrected to properly identify the primary and secondary volumes and the primary and secondary journals as suggested by the Examiner. No new matter has been added.

Specification

The specification has been amended to cure minor informalities. No new matter has been added.

Information Disclosure Statement

The Examiner has objected to the citation of two documents cited as "Other Documents" in the PTO-1449 Form filed on June 29, 2005. The first cited document corresponds to the present specification. The document is cited as: Remote Storage Disk Control Device with Function to Transfer commands to Remote Storage Devices, pp. 1-86...Fig. 1-28. This citation was incorrect in that the Figures were on drawing sheets 1-28, but included Figs. 1-41. Nevertheless, it is not necessary to have this document considered.

The second document corresponds to U.S. Serial Number 10/748,886 (U.S. Pub. No. 2005/0060505) and also incorrectly states that there are Figs. 1-14, when in fact, there were 14 sheets of Figs. and a total of 21 Figures. This application is cited in the accompanying IDS along with other documents for the Examiner's consideration.

It is submitted that the pending claims patentably define the present invention over these references.

Double Patenting Rejection

Claims 37-54 and 57-75 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 30-45 and 48 in co-pending Application No. 11/087,983 in view of O'Hare et al. Without admitting to the propriety of the rejection under this section, a terminal disclaimer is being submitted herewith to avoid this rejection and speed the prosecution of this application.

35 U.S.C. §112, first paragraph

The claims have been amended to overcome the rejection under this section.

35 U.S.C. § 103

Claims 32-39, 41, 43, 45, 47-61, 63, 65, 67 and 69-75 stand rejected under 35 U.S.C. §103(a) as being unpatentable over LeCrone (U.S. Patent No. 6,529,944) in view of O'Hare et al (U.S. Pub. No. 2001/0050915). Claims 40, 42, 44, 46, 62, 64, 66 and 68 stand rejected under 35 U.S.C. §103(a) as being unpatentable over LeCrone in view of O'Hare et al and further in view of Nakano et al (U.S. Pub. No. 2003/0051111). These rejections are traversed as follows.

The currently pending claims recite that a data input request that is received at a virtualization device, having a first logical unit number (LUN) of a virtual volume and data, is sent to a storage device after the LUN is changed from a first LUN to a

second LUN of a logical volume in the storage device. Furthermore, the virtualization device receives a command regarding pair status and sends the command to the storage device. According to some claims, the LUN included with the command received by the virtualization device is modified by the virtualization device before being sent.

LeCrone sends a pair control command using volume pairs. However, LeCrone is silent about relaying the command regarding pair status via the virtual volume/virtualization device and changing LUNs as recited as well as the sending of the command regarding pair status in the manner recited. The present invention overcomes this drawback of the prior art.

The deficiencies in LeCrone are not overcome by resort to O'Hare et al. The Examiner merely relies upon O'Hare et al for routing commands through storage systems. However, O'Hare is silent about sending commands regarding pair status in the manner recited. In addition, the deficiencies in LeCrone are not overcome by resort to Nakano et al. The Examiner merely relies upon Nakano et al for disclosing a relationship between two logical volumes as primary volumes and secondary volumes. As such, it is submitted that the pending claims patentably define the present invention over the cited art.

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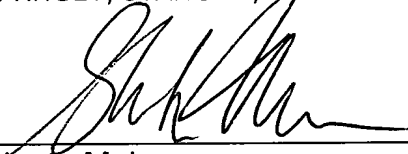
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Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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